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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 77

Serial Number: 07/870,759
Filing Date: 04/20/92
Appellant(s): Chenard

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**BOARD OF PATENT APPEALS
AND INTERFERENCES**

95-1963

Finnegan
For Appellant

MAILED

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EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed
May 13, 1994.

(1) *Status of claims.*

The statement of the status of claims contained in the brief
is correct.

This appeal involves claims 176-183, 193-198, 200-
207, 209-217, 219-225, 227-233 and 237 to 323.

(2) *Status of Amendments After Final.*

No amendment after final has been filed.

(3) *Summary of invention.*

The summary of invention contained in the brief is correct.

(4) *Issues.*

The appellant's statement of the issues in the brief is
correct.

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(5) *Grouping of claims.*

Appellant's brief includes a statement that claims 176-183, 193-198, 200-207, 209-217, 219-225, 227-233 and 237 to 323 do not stand or fall together and provides reasons as set forth in 37 C.F.R. § 1.192(c)(5) and (c)(6).

(6) *Claims appealed.*

The copy of the appealed claims contained in Exhibit 1 attached to the Appeal brief (paper no. 76) is correct.

(7) *Prior Art of record.*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

3167527	Hechenbleiker et al.	1/65
3196129	Hechenbleiker et al.	7/65
3595893	Schroeder et al.	7/71
3758537	Wowk	9/73
3928285	Gough et al.	12/75
4360619	Kugele et al.	11/82
4576984	Bresser et al.	3/86 (filed 2/81)
4665114	Kugele et al.	5/87 (filed 2/82)
4701486	Bresser et al.	10/87 (filed 2/81)

Japanese patent no. 56-2336 published 1/81

Japanese patent no. 55-160044 published 12/80

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(8) *New prior art.*

No new prior art has been applied in this examiner's answer.

(9) *Grounds of rejection.*

The following ground(s) of rejection are applicable to the appealed claims.

For the sake of providing continuity, the examiner has reproduced the rejections infra in conformance with Appellants characterization (Appeal Brief: page 4) that the rejection addresses the patentability of claims directed to incorporating the mercapto alkanol ester of a monocarboxylic acid with either a sulfur-tin mono or di-organotin compound (R-Sn-S) or a halogen-tin mono or di-organotin compound (R-Sn-halogen).

R-Sn-halogen

I. Claims 176-183, 193-198, 209-217, 219-225, 227-233 and 237-323 stand rejection as fully met under 35 USC 102(a) in view of Japanese patent 55-16044 or 56-2336.

II. Claims 176, 183, 237-246, 247-254, 261-272, 279-287 and 295 stand rejected under 35 USC 102(a) as fully met by Kugele (114).

R-Sn-S

III. Claims 193, 198 and 237-295 stand rejected under 35 USC 102(a) as fully met by Bresser et al. (984).

IV. Claims 193-198 and 237-295 stand rejected under 35 USC 102(a) as being fully met by Bresser et al. (486).

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R-Sn-halogen or R-Sn-S-

V. Claims 176-183, 193-198, 200-207, 209-217, 219-225, 227-233 and 237 to 323 stand rejected under 35 USC 103 as being rejected under 35 USC 103 as being unpatentable over Gough et al. in view of Stapfer, Hechenbleiker et al. (129 and 527), Wowk, Schroeder et al., Weinberg et al. (750) and Kauder et al. (915).

Rejection I

Examiner's Position

The Japanese patents 55-160044 and 56-2336 each disclose an organotin mercapto acid ester or organotin mercapto acid ester halide in combination with a mercapto alkanol-derived ester of a hydrocarbyl monocarboxylic acid as a heat stabilizer system for vinyl halide resins. The species of each stabilizer, i.e., organotin and mercapto ester, are far more numerous than the two species set forth in applicants foreign priority applications filed August 29, 1978 and May 11, 1979. Applicants U.S. filed application SN 07/254,313 filed April 15, 1981 is the earliest application which disclosure supports the broad class terminologies and species set forth in this application. The references' publication dates- December 1980 for Japanese patent 55-160044 and January 1981 for Japanese patent 56-2336 antedates the May 15, 1981 filing date. The Board of Patent Appeals and Interferences in its decision dated June 25, 1987 in

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patent application 254,313 agreed with this rationale (pages 2 to 7 of said decision).

The Foure and Mendelssohn 37 C.F.R. § 1.132 declarations proffered during the prosecution of the parent applications 254,312; 273,669 and 633,187, contend that applicant's foreign application disclosures support applicants contention that a generic appreciation of all and any organotin compounds having a Sn-S and/or Sn-halogen bond is contained in those priority documents. The English translations comprising exhibit B which is an attachment to applicants preliminary amendment in parent applicant SN 633,187, relates that the mercapto alkanol ester of a hydrocarbyl (or optionally substituted hydrocarbyl) monocarboxylic acid (page 3, last paragraph) can be advantageously added to various ostensibly known tin-containing stabilizers (pages 1, 5 and 6) to improve the latter's performance in vinyl halide resins exposed to elevated temperatures. The disclosure on page 6, lines 6 to 10 specifically states: "It is remarkable that these results [discoloration inhibition and retention of original viscosity properties] can be obtained as much with mono- or di-organic tin derivatives, as with sulfur-free tin salts, or with mixtures of these".

The following tin containing compounds are revealed:

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On page 8:

di-n-octyl tin bis dioctyl mercapto acetate.

On page 9:

the condensation product of butyl and butyl thio
stannic acids

On page 10:

butyl stannic acid anhydride and bi-n-butyl tin bis
(isodecyl mercapto acetate).

This disclosure is not tantamount to encompassing all and any known organotin stabilizers at that time much less those having Sn-S bonds. No Sn-halide bonded compounds are disclosed whatsoever. Applicants earlier foreign filed priority documents were simply not enabling. Applicants have cited over forty references in their reference disclosure statement in support of their contention that at the time applicant, Chenard et al., made their invention, the artisan would have no problem appreciating the application of Chenard's teaching to all conventionally known organotin compounds including those having Sn-S and/or Sn-halogen bonds. However the very multitude of patents proffered showing various type of organotin structures vis-a-vis their effect on static (color) or dynamic (viscosity changes) stability indicates that all organotin compounds were not inevitably equivalents for all heat stabilizing purposes. Therefore it would not be presumed that Chenard's disclosure would be considered

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instructive for application to all and every organotin Sn-S containing-stabilizer's enhancement.

Response to Appellants Arguments

Applicants earlier filed US application SN 070,503, filed August 28, 1979, was essentially based on a translation of their earlier filed French application which was filed August 29, 1978. The Exhibit B forming part of applicants response "Attachment to Preliminary Amendment" accompanying paper no. 63 in parent application 07/633,187 filed December 28, 1990 corresponds to said translation. Said applications (French and applicants first US filed application 070,503) were completely devoid of any reference to organotin-halide bonded stabilizers, whether further bonded to a mercapto radical or not. The disclosures do not relate any allusion thereto. More specifically applicants first reference thereto is their application SN 254,313 filed April 15, 1981 which proceeds these references' publications (December 1980 and January 1981). Since the Foure declaration relied upon (exhibit B in the paper dated (February 1989 entitled "Exhibits to Preliminary Amendment and Information Disclosure Statement", an attachment to paper #51) makes no reference to the organotin (mercapto acid ester) (halide) compounds of these references but rather to organotin mercapto acid esters, devoid of a Sn-halide linkage, supplemented with an alkyl tin halide compound, devoid of an Sn-S radicals, applicants had clearly not

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established that they have reduced to practice "so much of the claimed invention as the reference disclose" according to the dicta set forth in In re Stempel 241 F 2d 755, 113 USPQ 77 (CCPA 1957).

Applicants characterization (Appeal Brief: page 11) of the Board of Patent Appeals and Interferences decision in the parent application SN 254,313 filed April 15, 1981, dated June 25, 1987 (Exhibit 3) attached to Appeal Brief in addressing the issue of lack of antecedent support in their parent application 07/070,503 filed August 28, 1979 (and hence earlier filed foreign application of August 29, 1978) for halogen-tin bonded stabilizers, is clearly erroneous. Said decision stated (page 4):

"The present application, Serial No. 254,313, enlarges the scope of both the mono- or di-organotin derivative and the mercapto ester used to stabilize the polyvinyl halide polymer. In particular, the tin derivative now claimed includes a mono- and di-organotin tetravalent tin derivative where the remaining valences are satisfied by halogen and phosphorus as well as by the removal of the hydrogen atom from the oxygen atom of a carboxylic acid, an alcohol or toluol and the removal of hydrogen atom from the sulfur atom of the mercaptan, mercapto alcohol, mercapto acid or mercapto alcohol ester (see pp. 14-16). And the mercapto ester now includes the addition of optional substituents, a well as the addition of oxygen, carbonyl oxy, nitrogen and sulfur in the linear hydrocarbylene chain. Also, in forming the mercapto ester by reacting an acid with a mercapto alcohol, acid-capped polyethers, acid -capped silicone esters, and amino acids are now disclosed as useful (see pp. 8-13).

From our review of the parent application and the present application, we agree with the examiner that appellants are not entitled to the benefit of the filing date of their parent application for the instant claims on appeal since

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they define subject matter not disclosed in the parent case. Since appellants cannot claim benefit of the filing date of their parent case, claims 59 through 62 and 64 through 69 are accorded the date of April 15, 1981, the filing date of the instant application, and the Japanese documents and the Kugele patent are available 35 USC 102 references. We are not persuaded by appellants' argument that their French application and patent application disclosures are sufficient to show that appellants were in possession of a generic concept. The term "invention" as used in 35 SC 120 refers to the claimed invention and not a concept". (Emphasis added)

It is evident that this ruling found the earliest disclosure presented by Appellant for the R-Sn-halogen component's use with the mercapto alkanol ester to reside in their application SN 254,313 which filing date April 15, 1981 proceeded that of these references.

The Board of Patent Appeals and Interferences in their explanation why the Foure, Chenard and Mendelssohn 37 CFR 1.131 affidavits (Exhibits 4-7 of this application) were inadequate to support Appellants espousal that a generic concept predicating the conjoint use of any and all organotin compounds having Sn-S or Sn-halogen bonds with said ester, stated (page 6) that the evidence presented failed to show either as much as the references disclose in accordance with In re Stempel 44 CCPA 820 or as much as to render the claimed invention obvious in accordance with the dicta set forth in In re Spiller CCPA 1971.

The Board concluded (page 7) "However the present record and brief does not clearly state that the showing of organotin derivatives having the remaining valences satisfied by bonds to

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sulfur, halogen and mercapto acid ester would have rendered the claimed invention obvious. Thus the Rule 131 affidavit is deemed ineffective to remove the Japan references". Since these references were only applied vis-a-vis the R-Sn-halogen compounds conjoint use with said mercapto compound, it is evident that the Board held that applicants earlier application 070,503 filed August 28, 1979 was considered inadequate to establish appreciation of a generic concept regarding this particular class of organotin compounds (R-Sn-halogen) as well as those which alternatively contain instead phosphorus, oxy, carboxyl or alkoxide to Sn bonded moieties.

Rejection II

Examiner's position

Kugele (114) discloses as a PVC stabilizer the mixture of either an organotin mercapto acid ester or organotin mercaptoacid acid halide of formulas II, III, IV or V with a mercaptoester, HSR-O(O) C-R-SH. This reference's earliest disclosure for this combination is February 26, 1982. Applicants nowhere in any document discloses any actual mercapto ester of a mercapto substituted alkanoic acid although on page 8, line 25 of the parent application filed April 15, 1981, the acid portion O(O)CR²H is described as possibly containing a mercapto substituent. No disclosure is provided to delineate what is

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intended to be conveyed, i.e., whether -RSH, -SH, -SR or another -S-R-C(O)OR radical is contemplated.

Response to Arguments:

At page 8, line 25 of the parent application SN 254,313 filed April 15, 1981, of which this application is a continuation, applicants relates that a mercapto group inter alia eighteen other possible radicals may form a substituent on the R² moiety forming the hydrocarbyl acid derived portion of the molecule depicted at line 7. None of the proffered declarations (Foure, Mendelssohn, Chenard, Rakita or Larkin) relate that it was known to utilize a mercapto alkanol ester of a mercapto carboxylic acid as the co-stabilizer with an organotin mercapto acid ester halide as Kugele made. Indeed the clear import of applicants tenor was to provide mercapto radial(s) solely in the alcohol derived portion of the molecule as an alleged improvement over the solely hydrocarbyl alkyl esters of the corresponding mercapto-acids. Applicants provide no enabling disclosure for this genus.

Rejection III

Examiner's Position:

Bresser (984) discloses
$$\begin{array}{ccccc} \text{R-Sn-S-R-S-} & & \text{Sn-R} \\ & \text{||} & & \text{||} \\ & \text{O/S} & & \text{O/S} \end{array}$$

(claim 1 or 2), optionally with di-organotin mercapto compounds, and a mercapto stabilizer which can be a mercapto alcohol ester

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of a mercapto carboxylic acid (claim 3). Applicants claims broadly encompass this invention (Sn-S containing organotin compound and mercapto and mercapto ester of a monocarboxylic acid) but finds no support therefore in any of the parent applications or the instant application.

Rejection IV

Examiner's Position

Bresser et al. (486) discloses a tertiary stabilizing system for PVC resins. The effective filing date for the claimed invention is February 26, 1981, which antedates applicants earliest disclosure, SN 254,313 filed April 15, 1981. The stabilizer system comprises mono (formulas II-V) and di (formulas XII-XV) organotin mercapto compounds and the subject mercapto alkanol derived carboxylic acid esters. Except for the organotin structures XII and XIII, applicant has no support for these various permutations upon which compositions and methods the instant claims organotin -S and thiol combination reads.

Response to Arguments Traversing

Rejections III and IV

Applicants did not teach either (1) the use of a combination of organotin mercapto compounds with the mercapto alkanol-derived carboxylic acid esters, as evinced by Bresser's (486) disclosure or (2) the bis organotin sulfide or oxide compound of Bresser (984) in combination with the mercapto alkanol-derived carboxylic

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acid ester. No support is found for this combination in any of applicants applications. Patent applications' disclosures must provide specific combinations for which coverage is sought.

Rejection V

Examiner's Position

Gough et al. discloses (formula "g" in column 3 where "h" is 1 and "j" is zero) mercapto alkanol esters of a monocarboxylic acid as PVC heat stabilizers when used with an organotin borate. Accordingly applicants acknowledgement of this reference's existence (specification at page 3) as being part of the "description of the prior art" which may be described as "In general when the prior art additive contains a mercaptan function, the sulfur atom is always located in the acid residue.." is clearly erroneous. The species 2-thioethyl octanoate, $\text{HS-C}_2\text{H}_4\text{-O(0)CC}_7\text{H}_{15}$, contains the -SH radical in that alcohol derived portion. Moreover the reference teaches that both dynamic (viscosity retention) as well as static (discoloration inhibition) instabilities are ameliorated by the combination's use. Although Gough's organotin compound used as his co-stabilizer is an organotin borate, patentee does in comparative example 7 table 1, show that relative to no stabilizers presence (example 12 in table 1) or merely a mercapto acid ester's presence (example 16) in table II), use of another organotin

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compound per se which is within applicants purview "DMTBOT", an organotin mercapto acid ester, gives superior stability. Since said compound's stabilizing effect (10' to grey) is even greater than that afforded by the organotin borate per se (examples 17-19 showing 2 minutes to greying), it would be reasonable to expect that the superior tin stabilizer, DMTBOT, would experience some enhancement in its stabilizing performance by supplementation with the same class of mercapto compounds which include those species as started supra which contain the mercapto (thiol) radical in the alcohol derived portion of the molecule.

Gough's thiol-containing antioxidants' use to enhance organotin borate's performance is an extension of the teachings of Stapfer and the Hechenbleikner patents, that sulfur-containing compounds synergistically extend the heat stability of organotin compounds inclusive of the alkyl and alkylthio-stannic acids, known alternative stabilizers to the organotin mercapto acid esters (column 1, lines 53 - column 3, line 11). The bis (monobutyl tin di(isooctyl mercapto propionate) oxide species recited on 10 and 11 is within applicants sixth generic formulas recited on page 15. Kauder's sulfides (formulas B-D in column 4) are the sulfide analogues with applicants same generic formula when Z=S as depicted on page 16 of this application.

The organotin halide compounds of Wowk and Schroeder, encompassed within applicants Sn-halide definition are also known

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organotin heat stabilizers for PVC which performance would be expectedly enhanced by Gough's thiol compounds presence.

Response to Arguments

The Gough patent, published nearly three years (1975) prior to applicants earliest French-filed application (1978) on which priority has been requested, equated mercapto alkanol-derived carboxylic acid esters with the hydrocarbyl-derived mercapto acid esters a synergists for organotin borates. The teaching in the comparative examples (Tables I and III) clearly relate organotin mercapto acid esters superiority to the organotin borate per se. There is no plausible basis, nor has applicants revealed any, why the routineer in this art would not expect the superior tin stabilizer to be similarly benefited by the mercapto compound's presence as was the organotin borate given the organotin mercapto acid esters recognized superiority.

Applicants, in their April 15, 1981 filed application Sn 254,313 of which this application is a continuation, for the first time, attempted to document alleged unexpected results as compared to the alkanol-derived mercapto acid esters' use. The data is ambiguous and too limited. On page 32 stearyl mercapto acetate's conjoint use with the same butyl tin tris isooctyl mercapto acetate co-stabilizer permitted 20 minutes time to discolor as compared to the subject applicant's 2-mercaptoethyl stearate's (both within Gough's teaching) performance of 25

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minutes. The preceding text relates that the former compound (underlined supra) actually provided protection for only 10 minutes. Aside from the inconsistency, which renders dubious all the data given, this single comparison is too limited to support unobviousness given the broad genus of both type mercapto containing acid esters and numerous enumerated species within each genus which Gough teaches provide synergy.

Furthermore, it is wholly inconsistent for Appellants to contend (Appeal Brief: page 29) that it would be unobvious to extrapolate from Gough's earlier published disclosure (1975 vs 1978) of the same mercapto ester's synergistic effect on other organotin stabilizers known at the time including those having R-Sn-halogen or R-Sn-S- moieties, while simultaneously urging that their own earliest disclosure (application SN 06/070,503 filed August 28, 1979= French patent application 7824863 filed August 29, 1978) provided an enabling disclosure that precludes said organotin borate yet encompasses all other organotin stabilizers containing Sn-S or Sn-halogen bonds, by virtue of the following disclosure (Appeal Brief: page 6):

"It is remarkable that these results can be obtained as well with mono- or di-organic tin derivatives, with salts of tin not containing sulfur and with those which also contain the latter with their mixtures". Clearly "salts of tin not containing

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sulfur" would include the organotin borates of Gough whose published teaching preceded Appellants by three years.

The organotin mercaptoacid esters, $(R)_n-Sn(SRCOOR)_{x-n}$, constituted the standard by which organotin stabilizers performances were judged to wit see Wowk in example 4, col. 9. In this control dibutyl tin bis (isooctyl mercaptoacetate) per se was used at 2 parts by weight of the PVC resin. Dilution of said tin mercaptoacetate's presence to 1.8 parts by supplanting it with .2 parts of the reference's novel organotin mercapto halide oxide compound yielded comparable results, i.e., equal coloring after milling as well as oven aging. Gough uses the homologous (DMTBOT) dimethyl tin bis(isooctyl thioglycollate) at .5% in examples 7-12 as the standard to which the .5% (a-1 or 1-4) organotin borate/ .33% mercapto alkanol ester blend is compared. See Table 1 example 7 vs examples 8, 9 or 10. Clearly the object was to attain an effectiveness rate comparable to that of the DMTBOT per se. Examples 8 and 9 as well as 10 related that color stability could be at least as good (white vs white cream and cream vs yellow) and hence provided motivation to supplement more expensive tin stabilizers by the less expensive non metallic mercapto alkanol ester.

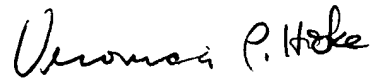
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For the reasons advanced above, the final rejection is proper and should be sustained.

Respectfully submitted,



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